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REVIEW & OUTLOOK

Who Speaks for Science?

Several science magazines have been beating up on us for having the presumption to notice that a prominent scientist wears no clothes. They demand to know what credentials we have for making such a statement.

The scientist in question is Harvard biochemist Matthew Meselson, intellectual godfather of the 1972 biological-weapons treaty and also of the "bee feces" thesis. This holds that "yellow rain" in Southeast Asia is nothing but bee droppings and therefore the Soviets haven't violated Prof. Meselson's treaty.

Mr. Meselson and his co-authors recently reasserted this thesis in *Scientific American*. But in "The 'Bee Feces' Theory Undone" (Sept. 6), our William Kuczewicz observed the real significance of this article: that the Meselson group had failed in its efforts to find yellow-rain toxins in bee droppings, that it failed to report these negative findings in its article, and that the notion that the toxins were natural products had collapsed.

This "materially misrepresented" the article, wrote *Scientific American* editor Jonathan Piel in a complaining letter. Mr. Piel denies that "Prof. Meselson once took the position that trichothecenes are a naturally occurring contaminant of bee feces. Prof. Meselson cited this as one of several possibilities in 1983."

"The Journal has succeeded in missing the main points of the scientific arguments involved," Chemical & Engineering News editor Michael Heylin wrote in an editorial. "As indicated in the *Scientific American* article, there is no clear proof of widespread mycotoxin poisoning in Southeast Asia from any source."

"The Wall Street Journal, widely acclaimed as one of the best newspapers in the world, seems to have a quirky streak that it should exorcise,"

advised an editorial in *Nature* magazine. In *Journal* editorials, it observed, "President Reagan often comes through as a kind of 'pinko.'" It concluded, "What the bee theory does however do is to discredit the investigations on which allegations of the Soviet use of biological weapons have been based."

The wisdom of science, as recorded by these magazines, then, is this: (1) The theory that bee feces contained trichothecene mycotoxins never existed, (2) there were no trichothecenes, and (3) no one died.

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Now, part of the problem here is epistemological. The methods of science are very good at dealing with the replicable events of nature, but we do not usually apply the scientific methods of evidence to practical human affairs. Unlike planets or atoms, humans can change their behavior. The yellow-rain attacks have apparently stopped, for example, an accomplishment for which the Reagan administration and The Wall Street Journal can claim some credit. In dealing with the deviancies of human behavior, mankind has not usually applied science but has over the centuries evolved different systems of proof and evidence.

The American Bar Association convened its House of Delegates in July, and among the business was a report and recommended resolution from its Standing Committee on Law and National Security. For two years the committee has had a working group studying the treaties on chemical and biological warfare. The resolution, unanimously approved, expressed concern over "the substantial evidence" of chemical attacks in Afghanistan and Iran, and "of the illegal use of lethal and incapacitating chemical weapons and toxins by Vietnam and Laos in Southeast Asia."

Lawyers, unlike scientists, are accustomed to dealing with human testimony. The Standing Committee's report details the accounts of H'Mong tribesmen being attacked by airplanes and helicopters showering them with sprays of various hues, but mostly yellow ones. It describes how the symptoms reported by these stone-age peoples correspond to those of obscure trichothecene poisoning. It describes the detection of trichothecenes in environmental samples from attack sites. It notes that "blood and urine samples of H'Mong refugees who had reported exposure to yellow rain and experienced the symptoms were found to contain traces of these toxins."

By the standards of evidence we usually apply to human affairs, this is an overwhelming case. The ABA report notes that "Dr. Meselson's theory is that yellow rain is nothing more than pollen excreted by bees in their cleansing flights and trichothecenes are probably a natural phenomenon infecting food in Southeast Asia." But it adds that this does not explain away the testimony: "there never has been a single report of bee feces causing deleterious effects to humans or animals in Southeast Asia, or any other region of the world."

In all, the Standing Committee concluded, "A review of the available evidence indicates that a variety of chemical and toxin agents have been used against the H'Mong people in Laos, the Khmer groups fighting the Vietnamese in Kampuchea since 1979, and the Mujaheddin in Afghanistan." This conclusion—which to our knowledge is shared by a bipartisan consensus of informed congressmen, throughout the political spectrum of the defense community and privately by foreign governments—is what any practical man would conclude after looking at the body of evidence.

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Some questions do seem worth debating. For whom do these science magazines speak? What is science, anyway? Can it really be so dense?

The burden of the Meselson *Scientific American* article is this: The H'Mong testimony is not consistent. The number of samples testing positive for trichothecenes is small, only six environmental samples. Positive

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